

**Draft**  
**Environmental Assessment**  
**Big Spring Creek Channel Restoration Project**



**September 19, 2014**



***Montana Fish,  
Wildlife & Parks***

**Big Spring Creek Channel Restoration Project  
Draft Environmental Assessment  
MEPA/NEPA CHECKLIST**

**PART I: PROPOSED ACTION DESCRIPTION**

**1. Type of Proposed Action:**

Montana Fish, Wildlife and Parks (FWP) in cooperation with the Natural Resources Conservation Service (NRCS), Fergus Conservation District (FCD), private landowners, and others including the Snowy Mountain Chapter of Trout Unlimited, Lewistown Friends of the Trails, and the City of Lewistown, proposes to restore Big Spring Creek downstream of Highway 191. A new channel with connected flood plain and a natural riffle/pool meander pattern is proposed for construction. Channel length would increase by approximately 60% to 3,200 ft from the current 2,000 ft.

**2. Agency authority for the proposed action:**

Montana Code Annotated (MCA) 87-1-201(3) The department (FWP) has the exclusive power to spend for the protection, preservation, management, and propagation of fish, game, fur-bearing animals, and game and nongame birds...

MCA 87-5-501 ...the policy of the state of Montana that its fish and wildlife resources and particularly the fishing waters within the state are to be protected and preserved to the end that they be available for all time, without change, in their natural existing state...

Administrative Rules of Montana (ARM) 12.7.1201 ...The purpose of the program is to restore essential habitats for the growth and propagation of wild fish populations...Funds may be used for long-term enhancement of streams and stream banks...to enhance wild fish and their habitats.

**3. Name of Project**

Big Spring Creek Channel Restoration Project

**4. Name, Address and Phone Number of Project Sponsor**

There are multiple sponsors for this project. Construction will primarily be sponsored by Montana Fish, Wildlife, & Parks, Natural Resources Conservation Service, and the Fergus Conservation District.

Montana Fish, Wildlife, & Parks  
PO Box 938  
215 W. Aztec Drive  
Lewistown, MT 59457  
(406) 538-4658

Natural Resources Conservation Service  
211 McKinley Street, Suite 3  
Lewistown, MT 59457  
(406) 538-7401

Fergus Conservation District  
211 McKinley Street, Suite 3  
Lewistown, MT 59457  
(406) 538-7401

**5. Anticipated Schedule, If Applicable:**

Initial Public scoping meeting:	March 11, 2009
Obtain funding	January 2010 – December 2013
Preliminary design	May 2010
Obtain permits	Fall/Winter 2014
Final design	August 2014
Estimated Construction/Commencement Date:	Fall/Winter 2014
Estimated Completion Date:	Fall 2016
Current Status of Project Design (% complete):	Feasibility/Scoping complete Preliminary design complete Funding sources obtained Permit applications in process

**6. Location Affected by Proposed Action (county, range and township)**

The Big Spring Creek Channel Restoration Project is located in section 10, Township 15 North, Range 18 East, Fergus County, Montana.



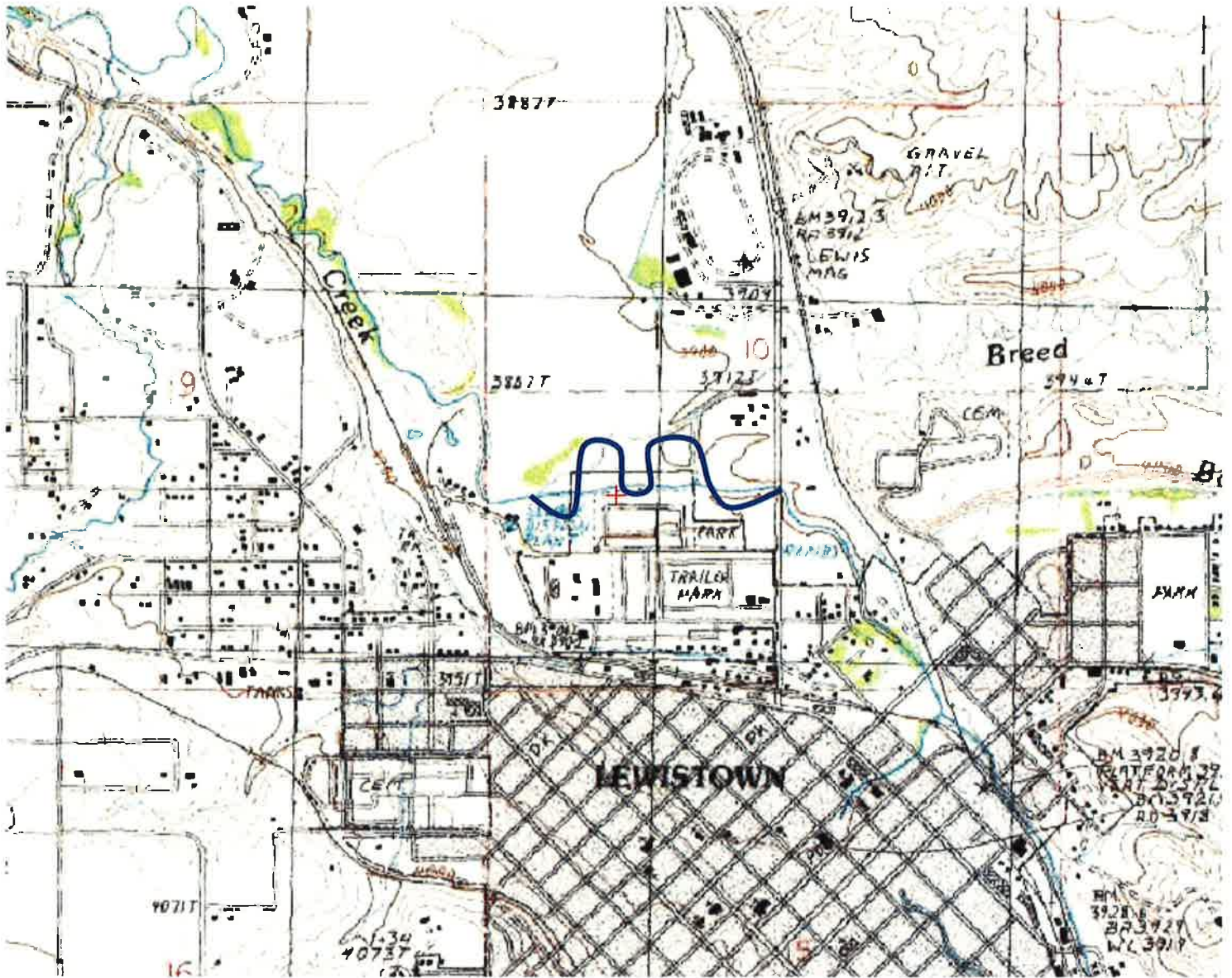


Figure 1. Topographic map showing location of proposed restoration project on Big Spring Creek. Blue line indicates approximate location of new Big Spring Creek channel.



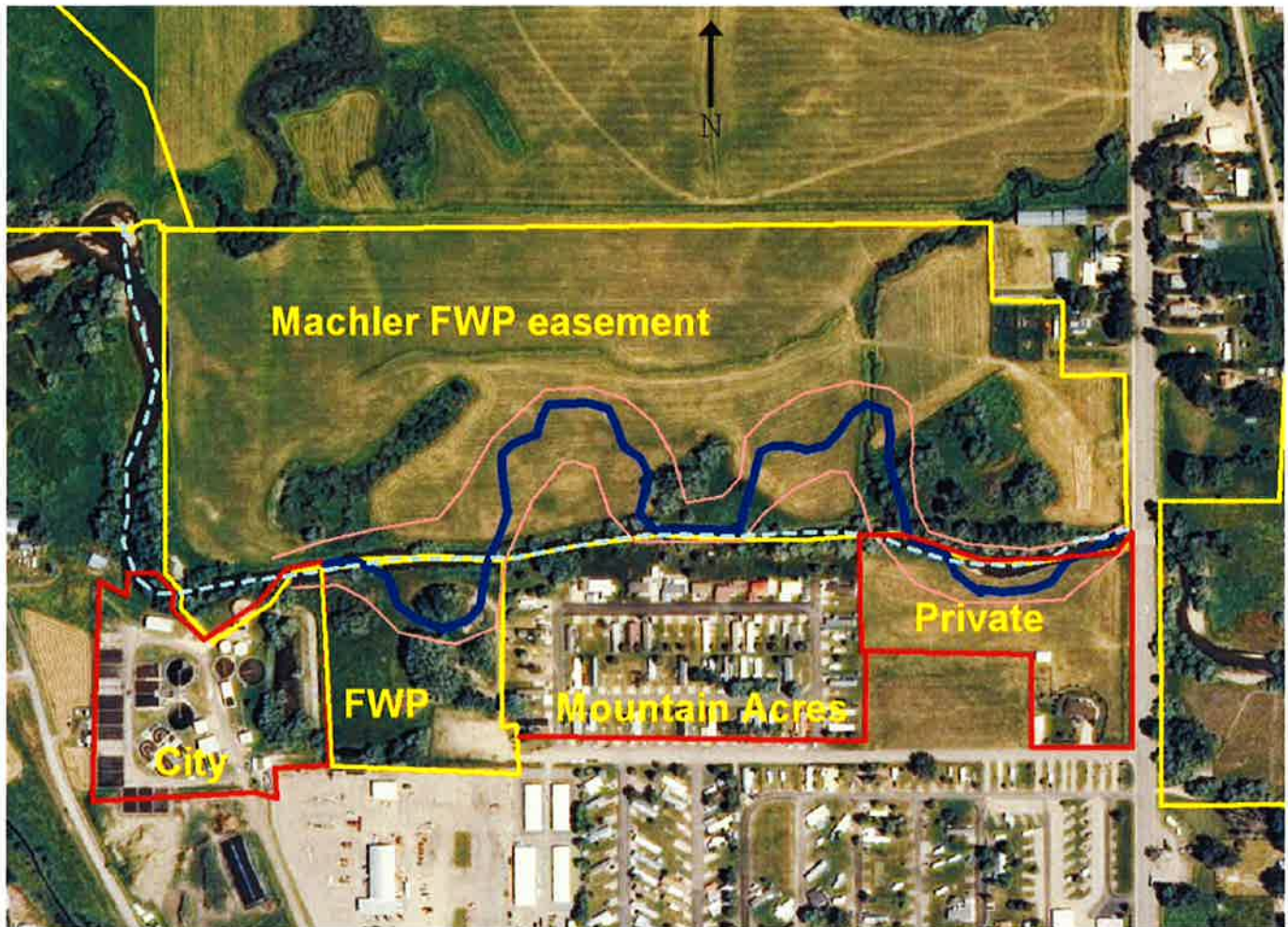


Figure 2. Aerial imagery showing location of proposed restoration project on Big Spring Creek and nearby land ownership. Blue line indicates approximate location of restored channel (see Figure 6 for more detail).

**7. Project Size: Estimate the number of acres that would be directly affected.**

(a) Developed: Residential..... <u>0</u> acres Industrial..... <u>0</u> acres	(d) Floodplain..... <u>~20</u> acres
(b) Open Space/Woodlands/ Recreation..... <u>0</u> acres	(e) Productive: Irrigated cropland ..... <u>~13</u> acres Dry cropland ..... <u>~1.5</u> acres Forestry ..... <u>0</u> acres Rangeland ..... <u>0</u> acres Other..... <u>0</u> acres
(c) Wetlands/Riparian Areas ..... <u>~10</u> acres	

**8. Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction.**

**(a) Permits:**

Agency Name	Permit
Montana Fish, Wildlife and Parks	124 permit
Department of Environmental Quality	318 permit
Army Corps of Engineers	404 permit
Fergus County	Floodplain permit
FEMA	FLOMAR; CLOMAR

**(b) Funding:**

Most recent design estimates indicate that the project would cost approximately \$1.17 million. To date, up to \$1.28 million (estimated cost plus ~10% contingency) have been committed to the project from various funding sources, including DNRC and DEQ (grants to Fergus Conservation District), FWP, Trout unlimited, and NRCS. Additionally, NRCS is providing in-kind services for designing and engineering the project.

**(c) Other Overlapping or Additional Jurisdictional Responsibilities:**

Agency Name	Type of Responsibility
None	

**9. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action.**

**Background**

The proposed restoration section of Big Spring Creek is immediately downstream of Highway 191 and was straightened in 1961 (Figure 3). The straightening of the creek reduced channel length by approximately 2,000 feet and ultimately required rip-rap to repair and stabilize the channel upstream of Highway 191. Concrete rip-rap is widespread throughout the straightened section (Figure 4). Stream bank erosion is extensive and the impacts continue with active bank erosion prevalent downstream (Figure 5). The severe consequences of straightening included channel instability, down-cutting, lateral bank erosion, and flooding downstream. The problems that resulted from this action were motivating factors for the Montana Legislature to enact the Natural Streambed and Land Preservation Act of Montana (310 Law) in 1975.

The goal of the proposed project is to restore natural form and function to a degraded portion of Big Spring Creek and to expand an important wild trout fishery by improving habitat. Additionally, the proposed project would create a connected floodplain, improve channel stability, and provide a functioning riparian area. Riparian vegetation and wildlife would also benefit from an improved floodplain. Improving riparian conditions would reduce stream bank erosion and increase the floodplain sediment filtering capabilities, thereby improving water quality. An NRCS riparian assessment performed in June 2009 scored the proposed stream reach as "not sustainable" due to channelization, concrete rip-rap, incised channel, and degraded riparian area. The assessment noted the current conditions would not improve without a major restoration project.





Figure 3. Continued on next page.





**Figure 3. Aerial photographs of Big Spring Creek pre-straightening (1953), post-straightening (1962), and current condition (2011). Note the loss of riparian area, vegetation, wetlands, and oxbows over time.**



**Figure 4. Concrete rip-rap bank stabilization on Big Spring Creek within proposed restoration section.**





**Figure 5. Bank erosion on Big Spring Creek downstream of proposed channel restoration.**

The proposed project is a cooperative effort between local, state, federal, and private entities that would benefit stream function, riparian habitat and recreation. In 2003, the Fergus Conservation District hired Land and Water Consulting to complete a feasibility study that evaluated options for restoring the Machler Section of Big Spring Creek. That study determined it would not be feasible to return the channel to the pre-1961 geometry due to flooding and land ownership concerns, but determined it would be feasible to rebuild the channel through the Machler property. More recently the Fergus Conservation District hired Mainstream Consulting in association with Allied Engineering (2010) to complete a preliminary engineering design to re-meander the channel. That study evaluated both full floodplain and reduced floodplain options. Over the past several years FWP has acquired easements (Machler easement) and purchased property to facilitate the proposed restoration project (Tews and Liknes 2007; Boggs and Liknes 2011; Smith and Tews 2013).

#### Proposed Action, Purpose, & Benefits

The proposed action is to construct approximately 3,200 feet of meandering stream that has a plan, dimension, and profile typical of a natural stable stream, a reconnected floodplain, and a functioning riparian area. Figure 6 shows a plan view of the proposed project as designed by NRCS. The NRCS design would be built to match stream morphology conditions of nearby reference reaches on Big Spring Creek. The proposed project involves constructing a new channel within an inset floodplain, bank stabilization, grade control, and revegetation efforts (using both live plantings and seeding). Approximately 50% of the channel construction would occur in the dry. After the new channel is complete the old channel would be partially filled with repurposed material from the new channel and would retain some capacity for flood waters. Outside banks of meanders would require bank stabilization. Mountain Acres Mobile Home Park would continue to be protected with existing rip-rap, which would be buried where possible. Natural materials (such as tree revetments, vegetated toe structures, and soil wraps) would be

used to stabilize the banks (Appendix C). Rock cross vanes would be placed at the ends of the new channel to provide grade control. The timing for diverting water into the new channel would depend on the stability of the newly constructed banks. Rooted vegetation and sod mats would be used to construct much of the new banks. Upon completion of the new channel, rock plugs and repurposed material from the new channel would be placed in the old channel. These areas would be reseeded.

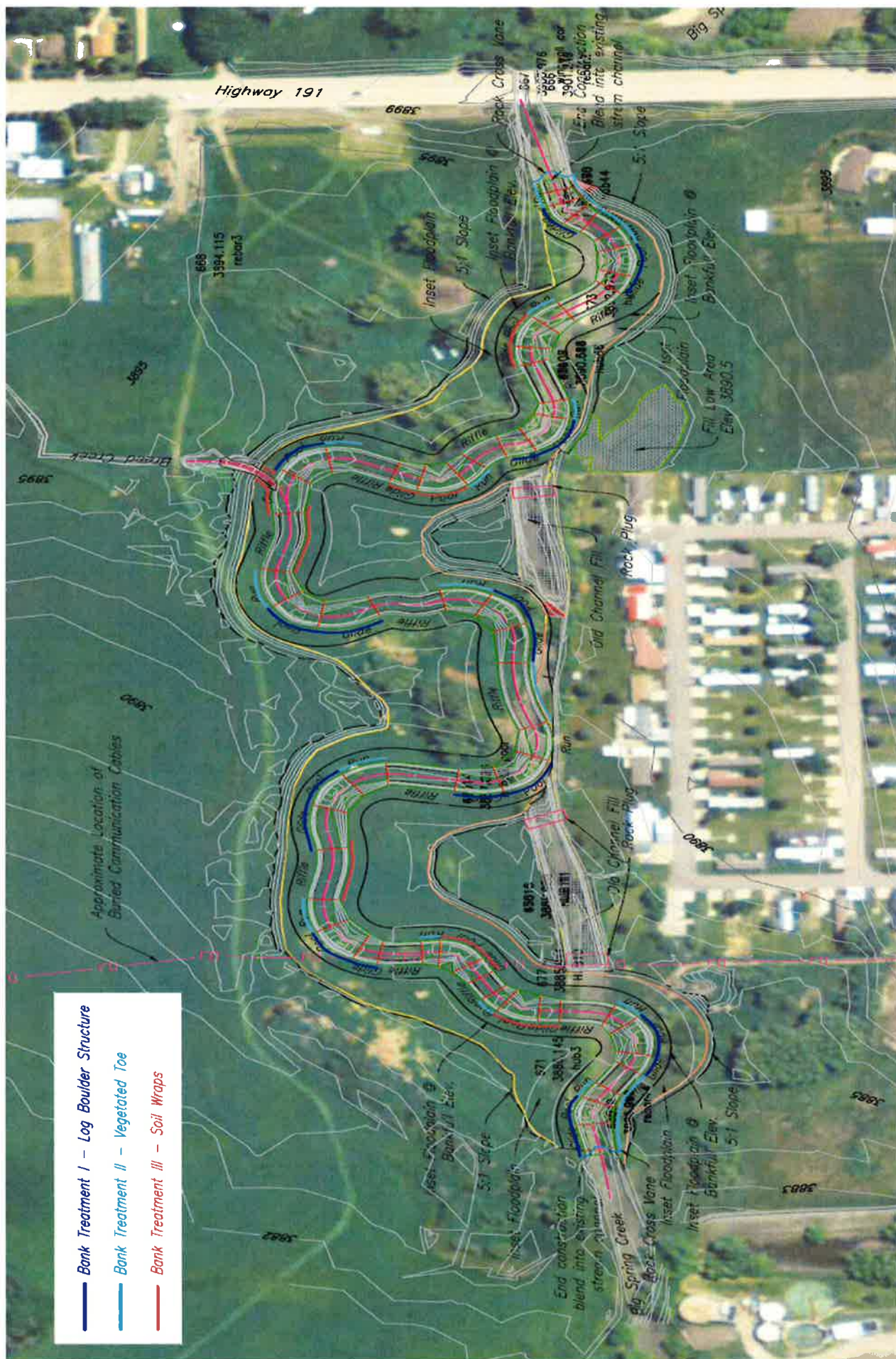
The straightened section of Big Spring Creek has been a longstanding source of problems to the riparian and aquatic habitat for more than 50 years. The straightening has resulted in large amounts of erosion and land loss, requiring extensive bank stabilization, which continues today. The purpose of the project is to create a properly functioning stream which would reduce erosion and improve riparian and aquatic habitat, improve aesthetics, provide recreational opportunities, and reduce flood flow velocities.

A similar restoration project was conducted on Big Spring Creek in 2000 at Brewery Flats and was successful at creating a properly functioning stream, functioning riparian zone, increased trout numbers (Tews 2007) and provided public use and accessibility to the stream (Tews and Lere 2002).

Big Spring Creek is the most productive, popular trout fishery in the Lewistown area, consistently ranking in the top 15 most popular angling waters in FWP Region 4 and in the top 100 statewide. Population surveys conducted during the past several years indicate Big Spring Creek has very high trout numbers just downstream of the Machler section. From 1995 to 2013 total trout  $\geq 10$  inches averaged 1,496/mile (range 911–2,358) immediately downstream in the Carroll Trail sampling section. The Machler sampling section, which includes the entire project area, has averaged about 1,300 trout  $\geq 10$  inches/mile from 2009 to 2013. During the last two decades, the estimated fishing pressure on Big Spring Creek has varied from 8,000 – 14,000 angler days. In 2009, there were about 9,000 angler days and about 8,000 angler days in 2011 on Big Spring Creek.

The proposed project would restore a degraded portion of Big Spring Creek, while also improving the natural form and function of the stream, enhancing habitat, and providing increased recreational opportunities.





## PART II: ENVIRONMENTAL REVIEW

### 1. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

#### A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Soil instability or changes in geologic substructure?			X		Improvement – Yes	1a
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?			X		Yes	1b
c. Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X			1d
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

1a/b/d. Soils would be disturbed during new channel construction. Test pits have indicated that gravel substrate exists at the proposed channel grade. The majority of the new channel would have raw banks. We propose to use sod mats and rooted vegetation to construct the new banks. Water would be diverted into the new channel when these banks are deemed suitably stable. Based on other stream channel construction projects in central Montana, the time frame can range from immediate to 1 year. Soils disturbed by construction would be re-seeded with native vegetation and banks would be stabilized with the placement of dense sod mats and transplanted willow clumps.

The goal of this project is to construct a channel with a natural meander pattern, and improve riparian habitat for fish and wildlife and the public. Downstream erosion would be reduced over the long term. Short-term increases in turbidity may occur during project construction. To minimize turbidity, the new channel would be constructed "in the dry" as much as possible, in-stream work would occur during low-flow periods and the operation of equipment in the stream channel would be minimized. The Department of Environmental Quality would be contacted to determine narrative conditions required to meet short-term water quality standards and protect aquatic biota. A 124 permit (Stream Protection Act) would be obtained from FWP, a flood plain permit would be obtained from Fergus County and a 404 permit would be obtained from the U.S. Army Corps of Engineers.

2. <u>AIR</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Emission of air pollutants or deterioration of ambient air quality? (also see 13 (c))			X			2a
b. Creation of objectionable odors?			X			2b
c. Alteration of air movement, moisture, or temperature patterns or any change in climate,		X				



either locally or regionally?						
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. For P-R/D-J projects, will the project result in any discharge which will conflict with federal or state air quality regulations? (Also see 2a)		NA				
f. Other		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (Attach additional pages of narrative if needed):

2a/b. The proposed action would require the use of heavy equipment that may cause short-term, temporary increases in diesel exhaust emissions & associated odors and localized, short-term deterioration of air quality.

3. <u>WATER</u>  Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X		Yes	3a
b. Changes in drainage patterns or the rate and amount of surface runoff?			X			3b
c. Alteration of the course or magnitude of flood water or other flows?			X (Benefit)		Yes	3c
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?			X			3e
f. Changes in the quality of groundwater?			X (Benefit)			3f
g. Changes in the quantity of groundwater?			X (Benefit)			3g
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. For P-R/D-J, will the project affect a designated floodplain? (Also see 3c)		NA				
m. For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a)		NA				
n. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

3a. In-stream work would occur at low flows and the operation of equipment in the stream channel would be minimized to the extent practical. The DEQ would be contacted to determine narrative conditions required to meet short-term water quality standards and protect aquatic biota (318 permit). A 124 permit (Stream Protection Act) would be obtained from FWP and a

404 permit would be obtained from the U.S. Army Corps of Engineers.

3b. The channel realignment would result is a slight change in the drainage pattern of Big Spring Creek. Also, as designed, the proposed realignment would change the point of confluence with Breed Creek.

3c/e. The proposed action would add approximately 1,200 feet of stream channel. The channel is designed to transport sediment, decrease flood flows, and reduce erosion. Floodplain analysis performed by NRCS engineers determined that the net acreage inundated by the 1% annual chance base flood (100-year event) would be decreased by approximately 1.5 acres. Areas that would experience an increase in acreage inundated include the neighboring properties of the City of Lewistown (0.5 acres), Weeden Ranch (1.1 acres), Steve and Susan Adams (1.7 acres), and Montana Fish, Wildlife, & Parks (0.3 acres). Areas that would experience a decrease in acreage inundated include the neighboring properties of the City of Lewistown Water Treatment Plant (0.8 acres), Mountain Acres Mobile Home Park (2.8 acres), Mark Machler (1.3 acres), and Robert and Ruth McNeil (0.2 acres). The areas that would experience an increase in flooded acreage by the 100-year event are undeveloped or agricultural fields. The analysis indicated that no buildings or infrastructure would be impacted in the new areas of inundation. The proposed project would require floodplain permits from Fergus County and the Federal Emergency Management Agency (FEMA).

3f/g. One of the goals of the proposed action would be to create a connected, functioning floodplain. Floodplains and their associated wetlands act as biological filters which improve water quality, and act as sponges, which increase water quantity. We expect that by reconnecting Big Spring Creek to a floodplain in a natural, meandering channel that groundwater recharge would increase as flood flows are slowed and areas of off-channel water storage are increased.

4. <u>VEGETATION</u>	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X (Benefit)			4a
b. Alteration of a plant community?			X (Benefit)			4b
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				4c
d. Reduction in acreage or productivity of any agricultural land?			X			4d
e. Establishment or spread of noxious weeds?			X		Yes	4e
f. For P-R/D- J, will the project affect wetlands, or prime and unique farmland?		X				4f
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

4a/b. The straightening that occurred on Big Spring Creek has limited vegetation growth in the riparian corridor. Currently, the vegetation is primarily willow species and grasses which occur in a narrow strip immediately bordering the channel. Rip-rap, bank stabilization, and channel entrenchment continue to limit vegetation abundance and diversity in the riparian area. A goal of the proposed project is to create a connected floodplain and a functioning riparian area. Native grasses, sedges, shrubs, willows, and trees would be planted along the new channel. Vegetation would come from established sod mats, new plantings, and live shoots taken from other riparian areas along Big Spring Creek. If time and conditions allow, water would not be diverted into the new channel until vegetation was established along the stream bank.

4c. A search of the Montana Natural Heritage website on July 31, 2014 found no plant species of concern or potential plant species of concern located in the proposed restoration area (Township 15 North, Range 18 East). The website is available at <http://mtnhp.org/SpeciesOfConcern/?AorP=p>.



4d. The proposed restoration project would reduce available agricultural land by approximately 14 acres. Most of the land is currently managed for hay production, which would be incorporated into the new channel and riparian area. The reduction in agricultural land would occur on the properties of Mark Machler (~13 acres) and Steve and Susan Adams (~1 acre). Both landowners are proponents of the proposed project and are aware of the reduction of agricultural production on their land.

4e. Increased use and activity at the project site may lead to the spread of noxious weeds. A weed management program would be incorporated into the project to mitigate this risk.

4f. The project would be expected to result in the development and growth of wetlands by reconnecting the floodplain and creating a functional riparian area.

5. <u>FISH/WILDLIFE</u>  Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X (Benefit)			5b
c. Changes in the diversity or abundance of nongame species?			X (Benefit)			5c
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				5f
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?	X					5g
h. For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f)		NA				5h
i. For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d)		X				
j. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

5b/c. The restoration project would increase stream length by approximately 60% and increase the quality and quantity of the riparian habitat. These changes would lead to increased abundance and diversity of fish and wildlife species in the area. Functioning riparian areas provide habitat for wildlife such as song birds, waterfowl, wading birds, raptors & owls, amphibians, invertebrates, muskrat, beaver, and white-tailed deer among many others. The fisheries response would not likely lead to an increase in the diversity of game and nongame species present, but we anticipate the abundance of fish would increase. A similar restoration project occurred upstream of Lewistown at Brewery Flats, and resulted in increased trout densities and total numbers (Tews, 2007).

5f/h. A search of the Montana Natural Heritage website on July 31, 2014 found two species of special concern and two potential species of special concern located in the proposed restoration area (Township 15 North, Range 18 East). The species of special concern included great blue heron and northern redbelly dace. The potential species of special concern included brook stickleback and plains minnow. No listed threatened or endangered species were found in the project area. The website is available at <http://mtnhp.org/SpeciesOfConcern/?AorP=p>.

5g. The project would result in a temporary increase in disturbances that may stress or harass wildlife while equipment and workers are on site. It is anticipated that the proposed restoration would result increased recreational use of the area. This

increased use would not be expected to have significant impacts to wildlife at a population level. Additionally, one benefit of the proposed project would be improved riparian habitat over the existing condition at the site. Any future developments that may increase stress on wildlife populations including trails or access sites are beyond the scope of the proposed project and are uncertain at this time.

## B. HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u>	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Increases in existing noise levels?			X			6a
b. Exposure of people to severe or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

6a. The proposed project would result in short-term increases in noise levels from equipment and workers being on site. Any impacts would be short term and minor.

7. <u>LAND USE</u>	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?			X			7a
b. Conflicted with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other: _____		X				7e

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

7a. As discussed in Section 4d, the proposed project would remove approximately 14 acres from hay production. The landowners who would be impacted by the proposed action are proponents of the project and aware of the loss of agricultural production on their land. .

8. <u>RISK/HEALTH HAZARDS</u>	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				



b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. For P-R/D-J, will any chemical toxicants be used? (Also see 8a)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

The proposed action would not increase risks or health hazards in the human environment.

9. <u>COMMUNITY IMPACT</u>	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				
f. Other:		X				9f

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

9f. The proposed project may result in increased popularity and use of the proposed site due to improved natural aesthetics and increased angling opportunity.

10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u>	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Will the proposed action result in:</b>						
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify: _____		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased used of any energy source?		X				
e. Define projected revenue sources		X				10e

f. Define projected maintenance costs.		X				10f
g. Other: _____		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

10e/f. Appendix B provides details regarding the proposed project's confirmed funding (dollar amount and source) and estimated cost details. The proposed project would not require annual maintenance costs.

11. <u>AESTHETICS/RECREATION</u>  Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?			X			11a
b. Alteration of the aesthetic character of a community or neighborhood?			X			11b
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report)			X			11c
d. For P-R/D-J, will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

11a. The project zone would display views typical of a construction site and would be visually unattractive during the construction phase. Equipment would be operating, materials would be stock piled, and the dry channel would be cut. Once completed, the proposed project would result in an aesthetically pleasing meandering channel with a functioning riparian area, which would be a vast improvement over the existing condition of a straightened channel with large amounts of rip-rap stabilization.

11b. Discussions with tenants of the Mountain Acres Mobile Home Park expressed concern with aesthetic changes that would occur from the project. The project would move portions of Big Spring Creek from the mobile home park boundary, which would be replaced with functioning floodplain and riparian area. The owners of Mountain Acres Mobile Home Park have been supportive of the proposed restoration project.

11c. The project would increase angler use and result in improved recreational opportunities for nature walks, birding, and floating.

12. <u>CULTURAL/HISTORICAL RESOURCES</u>  Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Destruction or alteration of any site, structure or object of prehistoric, historic, or paleontological importance?		X				12a
b. Physical change that would affect unique cultural values?		X				12b
c. Effects on existing religious or sacred uses of a site or area?		X				12c
d. For P-R/D-J, will the project affect historic or cultural resources? <b>Attach SHPO letter of clearance.</b> (Also see 12.a)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

12a/b/c. There are no known historical, cultural or archaeological resources at this site. Damon Murdo, cultural records manager of the Montana Preservation Office conducted a search of previously conducted cultural surveys in the area. He determined that additional cultural survey was not needed at this site. NRCS also conducted a cultural survey of the Machler portion of the project area and determined that there would be no significant impacts to cultural resources.

13. SUMMARY EVALUATION OF SIGNIFICANCE  Will the proposed action, considered as a whole:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)		X				
g. For P-R/D-J, list any federal or state permits required.						13g

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed)

13g. Permits that would be required for the project include: approval from FEMA regarding revisions to local floodplain elevations (CLOMR), U.S. Army Corps of Engineers 404 permit, Montana Stream Protection Act 124 permit, Montana Department of Environmental Quality Short-Term Water Quality Standard for Turbidity Related to Construction Activity 318 permit, and a Fergus County floodplain permit.



## **PART II: ENVIRONMENTAL REVIEW, CONTINUED**

2. **Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider and a comparison of the alternatives with the proposed action/preferred alternative:**

### **Alternative A: No Action**

If the No Action alternative were adopted, the straightened section of Big Spring Creek would continue to degrade portions of the creek, both upstream and down. The stream would not function properly. The continued impacts and instability originating from the degraded section would require local landowners to continue to protect their lands from erosion by utilizing bank stabilization methods, at much time and cost.

### **Alternative B: Restore Straightened Section (Proposed Alternative)**

The Restore Straightened Section alternative would create natural form and function to this section of Big Spring Creek. The proposed channel construction would reduce the instability and erosion caused by straightening the channel more than 50 years ago, improve riparian and aquatic habitat, recreate a connected floodplain, promote wetland development, and increase recreational opportunities in the project area. An NRCS floodplain analysis predicted that the 100-year floodplain would be decreased by approximately 1.5 acres in the section following channel restoration.

### **Discussion of Previously Considered Alternatives**

Throughout the previous 10 years of planning and public scoping for the proposed project, various alternatives were evaluated for their potential meet project objectives. Alternatives were evaluated on their potential to restore channel form and function & improve habitat, their potential impacts to the human environment and infrastructure, and their potential costs. Two previously considered alternatives were 1) placing artificial habitat structures and 2) restore natural channel at historical floodplain elevation, which have both been removed from consideration because they did not adequately meet project objectives. Placing habitat structures was removed due to the uncertain outcome, short-term benefit, and it did not address the form and function issues with the straightened channel. The habitat structure alternative would have been inexpensive and produced very little risk to the human environment and infrastructure. This alternative would not fulfill the objectives of the project. The restore natural channel at historical floodplain elevation alternative was removed because it posed significant risks to the human environment and infrastructure, it was a more expensive option than the proposed alternative, and logistics with connecting the upstream and downstream ends of the project were too difficult to be a feasible. The objectives of the project would not be met.

3. **Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:**

(This section provides an analysis of impacts to private property by proposed restrictions or stipulations in this EA as required under 75-1-201, MCA, and the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The analysis provided in this EA is conducted in accordance with implementation guidance issued by the Montana Legislative Services Division (EQC, 1996). A completed checklist designed to assist state agencies in identifying and valuating proposed agency actions, such as imposed stipulations, that may result in the taking or damaging of private property, is included in Appendix A.)

The EA has disclosed any impacts and mitigation measures to private property as a result of the proposed action. Under the ACOE Nationwide 27 permitting process, mitigation is not required for habitat restoration projects.

### **PART III: NARRATIVE EVALUATION AND COMMENT**

This analysis did not reveal any significant impacts to the human or physical environment for the proposed alternative.

After consideration of the alternatives listed, the desired objectives, past public meetings and any limitations identified in this analysis, FWP has made the determination that Alternative B, as described in the draft EA, has the greatest potential of fulfilling the desired objectives while having the least environmental impact. As described above, other possible alternatives have been removed from consideration due to inadequately meeting the project objectives of restoring channel form and function, improving riparian and aquatic habitat, limiting impacts to the human environment and infrastructure, and cost.

### **PART IV: EA CONCLUSION SECTION**

1. **Based on the significance criteria evaluated in this EA, is an EIS required (YES/NO)? If an EIS is not required, explain why the EA is the appropriate level of analysis for the proposed action.**

No. Based on an evaluation of impacts to the physical and human environment, this assessment revealed no significant negative impacts from the proposed action; therefore, an EIS is not necessary and an environmental assessment is the appropriate level of analysis.

2. **Describe the level of public involvement for this project if any, and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?**

FWP held an informational scoping meeting regarding the restoration project on March 11, 2009. There were 27 participants. Scoping comments were accepted until April 17, 2009. A total of 17 scoping comments were received. The local chapter of Trout Unlimited and 13 individuals were in favor of the project. Three comments were not in favor of the project. A Mountain Acres Mobile Home Park representative initially expressed concerns regarding the project but expressed written support for the project after the scoping meeting discussions.

A completed NRCS design has recently been completed and an additional public scoping meeting to update the public and review the design is planned for September 24, 2014. Additionally, the draft EA will be circulated to interested parties such as local governments, angling & recreational groups, and local sporting goods stores. The draft EA will be available on the FWP website and copies will be made available in the FWP Lewistown Area Resource Office and Region 4 Headquarters. A notice of the proposed project and draft EA will be advertised in the Lewistown News-Argus.

This level of public involvement is appropriate for a project of this scale.

**3. Duration of comment period, if any. Date when comments are due.  
Mail or email address to send comments.**

The draft EA will be available for public comment starting September 19, 2014 through October 18, 2014.

Comments can be sent to:  
Montana Fish, Wildlife, & Parks  
Attn: Big Spring Creek Restoration Project  
215 W. Aztec Dr.  
PO Box 938  
Lewistown, MT 59457  
clsmith@mt.gov

**4. Name, title, address, and phone number of the person(s) responsible for preparing the EA.**

Clint Smith  
Fisheries Biologist  
Montana Fish, Wildlife, & Parks  
215 W. Aztec Dr.  
PO Box 938  
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(406) 538-4658 \*227

Anne Tews  
Fisheries Biologist  
Montana Fish, Wildlife, & Parks  
215 W. Aztec Dr.  
PO Box 938  
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(406) 538-4658 \*225



## **PART VI. REFERENCES**

- Boggs, P. and G. Liknes. 2011. Mountain Acres Fishing Access Site Acquisition. Montana, Fish Wildlife and Parks, Helena, MT.
- Fergus County Conservation District and Land and Water Consulting, Inc. 2003. Big Spring Creek. Feasibility Study. Project Number 310020.
- Mainstream Restoration Inc. 2010. Big Spring Creek Restoration, Fergus County MT. Preliminary Engineering Report. Prepared for Fergus Conservation District. Bozeman, MT.
- Smith, C. J. and A. E. Tews. 2013. Environmental Assessment: Bank of the Rockies Property Acquisition – Big Spring Creek. Montana Fish, Wildlife, and Parks, Helena, MT.
- Tews, A. and M. Lere. 2002. The resurrection of Brewery Flats. Montana Outdoors. March/April, p. 20.
- Tews, A. E., S. Leathe and D. Edge. 2006. Environmental Assessment, Machler Fishing Access Site Easement. Montana, Fish, Wildlife and Parks, Helena, MT.
- Tews, A. E. 2007. Changes in Wild rainbow trout and brown trout population after a stream restoration project on Big Spring Creek, Montana. In: Carline, R.F.; Losapio, C. eds. 2007. Sustaining wild trout in a changing world; proceedings of Wild Trout IX symposium.

## APPENDIX A

### PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

The 54th Legislature enacted the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The intent of the legislation is to establish an orderly and consistent process by which state agencies evaluate their proposed actions under the "Takings Clauses" of the United States and Montana Constitutions. The Takings Clause of the Fifth Amendment of the United States Constitution provides: "nor shall private property be taken for public use, without just compensation." Similarly, Article II, Section 29 of the Montana Constitution provides: "Private property shall not be taken or damaged for public use without just compensation..."

The Private Property Assessment Act applies to proposed agency actions pertaining to land or water management or to some other environmental matter that, if adopted and enforced without compensation, would constitute a deprivation of private property in violation of the United States or Montana Constitutions.

The Montana State Attorney General's Office has developed guidelines for use by state agency to assess the impact of a proposed agency action on private property. The assessment process includes a careful review of all issues identified in the Attorney General's guidance document (Montana Department of Justice 1997). If the use of the guidelines and checklist indicates that a proposed agency action has taking or damaging implications, the agency must prepare an impact assessment in accordance with Section 5 of the Private Property Assessment Act. For the purposes of this EA, the questions on the following checklist refer to the following required stipulation(s):

***(LIST ANY MITIGATION OR STIPALTIONS REQUIRED, OR NOTE "NONE")***

#### DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PRIVATE PROPERTY ASSESSMENT ACT?

YES	NO	
	X	1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deprive the owner of all economically viable uses of the property?
	X	4. Does the action deny a fundamental attribute of ownership?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If the answer is <b>NO</b> , skip questions 5a and 5b and continue with question 6.]
	NA	5a. Is there a reasonable, specific connection between the government

		requirement and legitimate state interests?
	NA	5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property?
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? [If the answer is <b>NO</b> , do not answer questions 7a-7c.]
	NA	7a. Is the impact of government action direct, peculiar, and significant?
	NA	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
	NA	7c. Has government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if **YES** is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if **NO** is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with Section 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.



## Appendix B

### Estimated costs and funding for proposed Big Spring Creek restoration project.

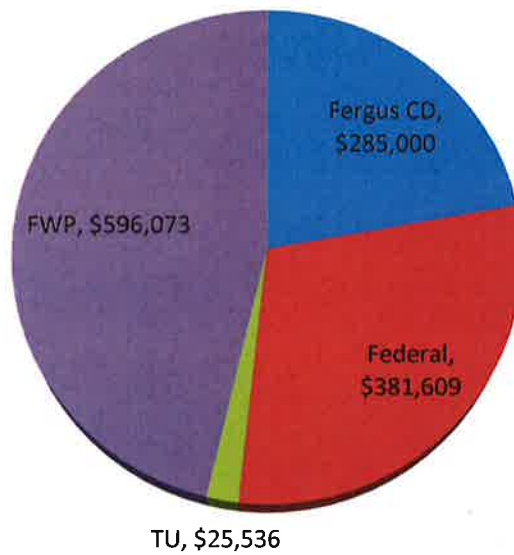
#### Estimated Construction Costs as of 2013

Item	Quantity	Unit	Unit Price	Cost
<b>General</b>				
Mobilization / Demobilization / Overhead	5	%		\$48,165
Silt Fence purchase & placement	1,000	ft	\$0.50	\$500
<b>Earthwork</b>				
Salvage & stockpile topsoil - scraper	16,510	cy	\$3.50	\$57,785
Excavation (floodplain / new channel) - excavator	85,030	cy	\$2.21	\$187,916
Spread topsoil on floodplain - scraper	16,610	cy	\$3.00	\$49,830
Haul & stockpile gravel to be used onsite - side dumps	12,900	cy	\$1.40	\$18,060
Endhaul excess excavation offsite - side dumps	72,130	cy	\$5.38	\$388,059
Embankment in old channel / floodplain - excavator	12,900	cy	\$3.50	\$45,150
<b>Materials</b>				
Purchase & haul conifer trees to project site	192	each	\$172.00	\$33,024
Purchase & haul ballast boulders to project site	195	tons	\$130.00	\$25,350
Purchase & haul riprap	620	cy	\$60.00	\$37,200
Purchase erosion control fabric & stakes - Type 1	1	each	\$15,000.00	\$15,000
Purchase rebar & grass seed	1	each	\$800.00	\$800
<b>Instream Structures</b>				
Temporary bank armor	4	each	\$600.00	\$2,400
Harvest dormant willow stakes	1	job	\$4,800.00	\$4,800
Install Type I bank protection structures	48	each	\$1,620.00	\$77,760
Install Type II bank protection (brush toe / fabric)	1,219	ft	\$7.20	\$8,777
Transplant live willow clumps	136	each	\$80.00	\$10,880
<b>TOTAL CONSTRUCTION COSTS</b>				<b>\$1,011,457</b>
Fiber optic line relocate				\$59,349
Independent Planting Contract (estimate)				<b>\$50,000</b>
Permitting costs (estimate)				<b>\$12,000</b>
Monitoring / Education for 319 Grant				\$7,000
Conservation District overhead				\$28,500
<b>TOTAL COSTS</b>				<b>\$1,168,306</b>

### Funding as of August 2014

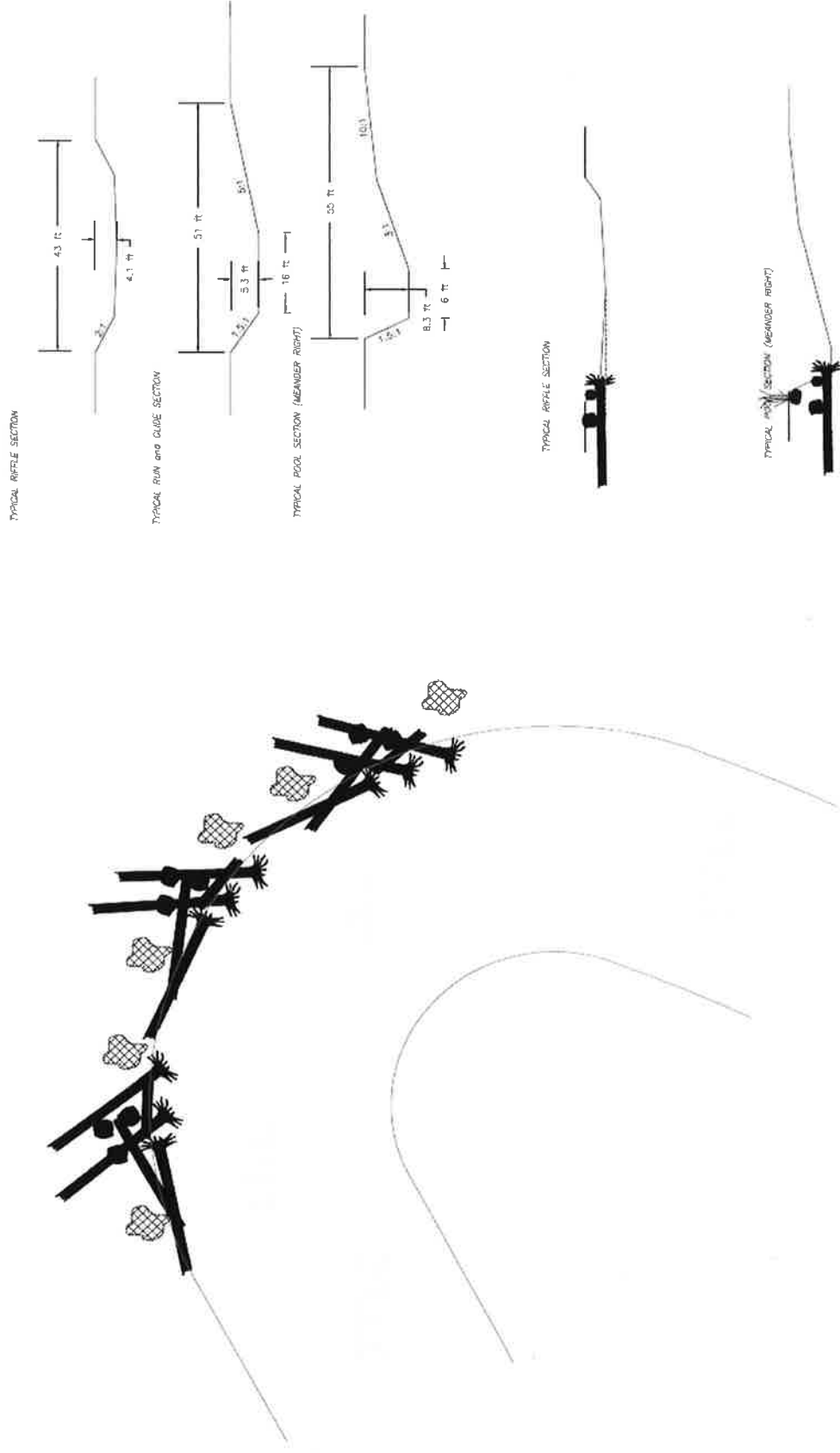
Item	Status	Amount
DEQ 319 Grant	Secure	\$185,000
DNRC RRGL Grant	Secure	\$100,000
Federal Grant #1	Secure	\$96,768
Federal Grant #2	Secure	\$284,841
Trout Unlimited	Secure	\$21,536
Trout Unlimited - Embrace a stream	Secure	\$4,000
Montana FWP - Future Fisheries	Secure	\$155,000
Montana FWP - Unspecified	Secure – up to	\$441,073
<b>Total Funds</b>		<b>\$1,288,218</b>

### Funding Sources

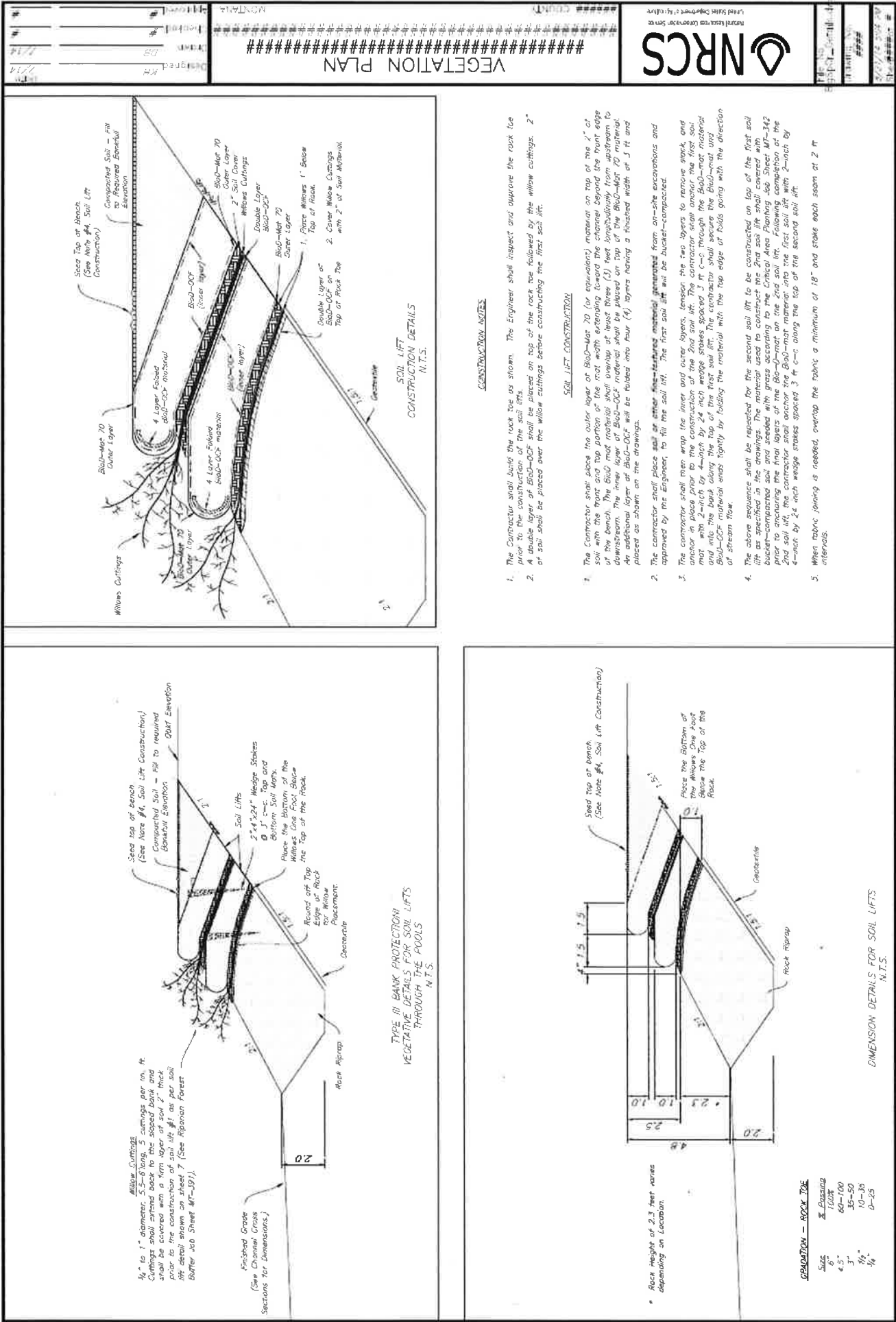


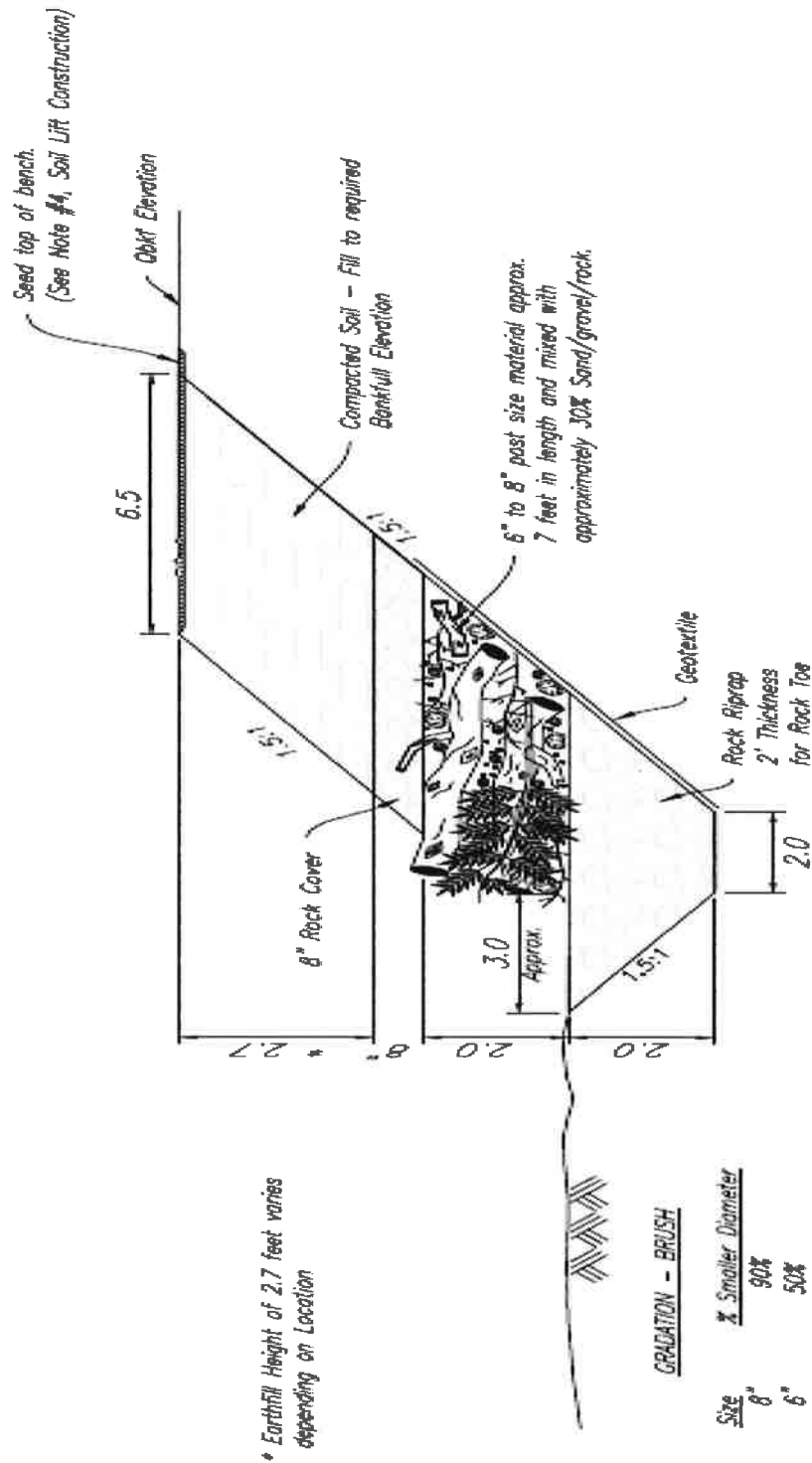
## Appendix C

Design drawings of proposed bank stabilization structures to be used in proposed Big Spring Creek restoration project.









TYPE II BANK PROTECTION  
VEGETATED TOE DETAIL  
N.T.S.

GRADATION - ROCK TOE		GRADATION - BRUSH	
Size	% Passing	Size	% Smaller Diameter
6"	100%	8"	90%
4.5"	60-100	6"	50%
3"	35-50	4"	20%
1 1/2"	10-35	2"	<10%
3/4"	0-25		